IFWO

RAW SEQUENCE LISTING DATE: 02/20/2004
PATENT APPLICATION: **US/10/632,150** TIME: 12:37:32

Input Set : **N:\Crf3\RULE60\10632150.RAW.txt**
Output Set: **N:\CRF4\02202004\J632150.raw**

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 1 <110> APPLICANT: Chiaur, D.
 2       Pagano, M.
 3       Latres, E.
 4 <120> TITLE OF INVENTION: NOVEL UBIQUITIN LIGASES AS THERAPEUTIC TARGETS
 5 <130> FILE REFERENCE: 5914-081
 6 <140> CURRENT APPLICATION NUMBER: 10/632,150
 7 <141> CURRENT FILING DATE: 2003-07-30
 8 <150> PRIOR APPLICATION NUMBER: US/09/385,219
 9 <151> PRIOR FILING DATE: 1999-08-27
10 <150> PRIOR APPLICATION NUMBER: 60/098,355
11 <151> PRIOR FILING DATE: 1998-08-28
12 <150> PRIOR APPLICATION NUMBER: 60/118,568
13 <151> PRIOR FILING DATE: 1999-02-03
14 <150> PRIOR APPLICATION NUMBER: 60/124,449
15 <151> PRIOR FILING DATE: 1999-03-15
16 <160> NUMBER OF SEQ ID NOS: 90
17 <170> SOFTWARE: PatentIn Ver. 2.0
19 <210> SEQ ID NO: 1
20 <211> LENGTH: 2151
21 <212> TYPE: DNA
22 <213> ORGANISM: Homo sapiens
23 <400> SEQUENCE: 1
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25       tcggcgatta tggacccggc cgaggcggtg ctgcaagaga aggcactcaa gtttatgaat 120
26       tcctcagaga gagaagactg taataatggc gaacccccta ggaagataat accagagaag 180
27       aattcactta gacagacata caacagctgt gccagactct gcttaaacca agaaacagta 240
28       tgtttagcaa gcactgctat gaagactgag aattgtgtgg ccaaaacaaa acttgccaat 300
29       ggcacttcca gtatgattgt gcccaagcaa cggaaactct cagcaagcta tgaaaaggaa 360
30       aaggaactgt gtgtcaaata ctttgagcag tggtcagagt cagatcaagt ggaatttgtg 420
31       gaacatctta tatcccaaat gtgtcattac caacatgggc acataaactc gtatcttaaa 480
32       cctatgttgc agagagattt cataactgct ctgccagctc ggggattgga tcatatcgct 540
33       gagaacattc tgtcatacct ggatgccaaa tcactatgtg ctgctgaact tgtgtgcaag 600
34       gaatggtacc gagtgacctc tgatggcatg ctgtggaaga agcttatcga gagaatggtc 660
35       aggacagatt ctctgtggag aggcctggca gaacgaagag gatggggaca gtatttattc 720
36       aaaaacaaac ctcctgacgg gaatgctcct cccaactctt tttatagagc actttatcct 780
37       aaaattatac aagacattga gacaatagaa tctaattgga gatgtggaag acatagttta 840
38       cagagaattc actgccgaag tgaaacaagc aaaggagttt actgtttaca gtatgatgat 900
39       cagaaaatag taagcggcct tcgagacaac acaatcaaga tctgggataa aaacacattg 960
40       gaatgcaagc gaattctcac aggccataca ggttcagtcc tctgtctcca gtatgatgag 1020
41       agagtgatca taacaggatc atcggattcc acggtcagag tgtgggatgt aaatacaggt 1080
42       gaaatgctaa acacgttgat tcaccattgt gaagcagttc tgcacttgcg tttcaataat 1140
43       ggcatgatgg tgacctgctc caaagatcgt tccattgctg tatgggatat ggcctcccca 1200
44       actgacatta ccctccggag ggtgctggtc ggacaccgag ctgctgtcaa tgttgtagac 1260
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tttgatgaca agtacattgt ttctgcatct ggggatagaa ctataaaggt atggaacaca 1320
agtacttgtg aatttgtaag gaccttaaat ggacacaaac gaggcattgc ctgtttgcag 1380
tacagggaca ggctggtagt gagtggctca tctgacaaca ctatcagatt atgggacata 1440
gaatgtggtg catgtttacg agtgttagaa ggccatgagg aattggtgcg ttgtattcga 1500
tttgataaca agaggatagt cagtggggcc tatgatggaa aaattaaagt gtgggatctt 1560
gtggctgctt tggacccccg tgctcctgca gggacactct gtctacggac ccttgtggag 1620
cattccggaa gagtttttcg actacagttt gatgaattcc agattgtcag tagttcacat 1680
gatgacacaa tcctcatctg ggacttccta aatgatccag ctgcccaagc tgaacccccc 1740
cgttcccctt ctcgaacata cacctacatc tccagataaa taaccataca ctgacctcat 1800
acttgcccag gacccattaa agttgcggta tttaacgtat ctgccaatac caggatgagc 1860
aacaacagta acaatcaaac tactgcccag tttccctgga ctagccgagg agcagggctt 1920
tgagactcct gttgggacac agttggtctg cagtcggccc aggacggtct actcagcaca 1980
actgactgct tcagtgctgc tatcagaaga tgtcttctat caattgtgaa tgattggaac 2040
ttttaaacct ccctcctct cctcctttca cctctgcacc tagtttttc ccattggttc 2100
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<212> TYPE: PRT
<213> ORGANISM: Homo sapiens
<400> SEQUENCE: 2

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1 5 10 15
Asn Ser Ser Glu Arg Glu Asp Cys Asn Asn Gly Glu Pro Pro Arg Lys
20 25 30
Ile Ile Pro Glu Lys Asn Ser Leu Arg Gln Thr Tyr Asn Ser Cys Ala
35 40 45
Arg Leu Cys Leu Asn Gln Glu Thr Val Cys Leu Ala Ser Thr Ala Met
50 55 60
Lys Thr Glu Asn Cys Val Ala Lys Thr Lys Leu Ala Asn Gly Thr Ser
65 70 75 80
Ser Met Ile Val Pro Lys Gln Arg Lys Leu Ser Ala Ser Tyr Glu Lys
85 90 95
Glu Lys Glu Leu Cys Val Lys Tyr Phe Glu Gln Trp Ser Glu Ser Asp
100 105 110
Gln Val Glu Phe Val Glu His Leu Ile Ser Gln Met Cys His Tyr Gln
115 120 125
His Gly His Ile Asn Ser Tyr Leu Lys Pro Met Leu Gln Arg Asp Phe
130 135 140
Ile Thr Ala Leu Pro Ala Arg Gly Leu Asp His Ile Ala Glu Asn Ile
145 150 155 160
Leu Ser Tyr Leu Asp Ala Lys Ser Leu Cys Ala Ala Glu Leu Val Cys
165 170 175
Lys Glu Trp Tyr Arg Val Thr Ser Asp Gly Met Leu Trp Lys Lys Leu
180 185 190
Ile Glu Arg Met Val Arg Thr Asp Ser Leu Trp Arg Gly Leu Ala Glu
195 200 205
Arg Arg Gly Trp Gly Gln Tyr Leu Phe Lys Asn Lys Pro Pro Asp Gly
210 215 220
Asn Ala Pro Pro Asn Ser Phe Tyr Arg Ala Leu Tyr Pro Lys Ile Ile

225 230 235 240
Gln Asp Ile Glu Thr Ile Glu Ser Asn Trp Arg Cys Gly Arg His Ser
245 250 255
Leu Gln Arg Ile His Cys Arg Ser Glu Thr Ser Lys Gly Val Tyr Cys
260 265 270
Leu Gln Tyr Asp Asp Gln Lys Ile Val Ser Gly Leu Arg Asp Asn Thr
275 280 285
Ile Lys Ile Trp Asp Lys Asn Thr Leu Glu Cys Lys Arg Ile Leu Thr
290 295 300
Gly His Thr Gly Ser Val Leu Cys Leu Gln Tyr Asp Glu Arg Val Ile
305 310 315 320
Ile Thr Gly Ser Ser Asp Ser Thr Val Arg Val Trp Asp Val Asn Thr
325 330 335
Gly Glu Met Leu Asn Thr Leu Ile His His Cys Glu Ala Val Leu His
340 345 350
Leu Arg Phe Asn Asn Gly Met Met Val Thr Cys Ser Lys Asp Arg Ser
355 360 365
Ile Ala Val Trp Asp Met Ala Ser Pro Thr Asp Ile Thr Leu Arg Arg
370 375 380
Val Leu Val Gly His Arg Ala Ala Val Asn Val Val Asp Phe Asp Asp
385 390 395 400
Lys Tyr Ile Val Ser Ala Ser Gly Asp Arg Thr Ile Lys Val Trp Asn
405 410 415
Thr Ser Thr Cys Glu Phe Val Arg Thr Leu Asn Gly His Lys Arg Gly
420 425 430
Ile Ala Cys Leu Gln Tyr Arg Asp Arg Leu Val Val Ser Gly Ser Ser
435 440 445
Asp Asn Thr Ile Arg Leu Trp Asp Ile Glu Cys Gly Ala Cys Leu Arg
450 455 460
Val Leu Glu Gly His Glu Glu Leu Val Arg Cys Ile Arg Phe Asp Asn
465 470 475 480
Lys Arg Ile Val Ser Gly Ala Tyr Asp Gly Lys Ile Lys Val Trp Asp
485 490 495
Leu Val Ala Ala Leu Asp Pro Arg Ala Pro Ala Gly Thr Leu Cys Leu
500 505 510
Arg Thr Leu Val Glu His Ser Gly Arg Val Phe Arg Leu Gln Phe Asp
515 520 525
Glu Phe Gln Ile Val Ser Ser Ser His Asp Asp Thr Ile Leu Ile Trp
530 535 540
Asp Phe Leu Asn Asp Pro Ala Ala Gln Ala Glu Pro Pro Arg Ser Pro
545 550 555 560
Ser Arg Thr Tyr Thr Tyr Ile Ser Arg
565

<210> SEQ ID NO: 3
<211> LENGTH: 1476
<212> TYPE: DNA
<213> ORGANISM: Homo sapiens
<400> SEQUENCE: 3
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145       acggacttgc agaaaaatga aactctggat cacctgatta gtctgagtgg ggcagtccag 120
146       ctcaggcatc tctccaataa cctagagact ctcctcaagc gggacttcct caaactcctt 180
147       cccctggagc tcagttttta tttgttaaaa tggctcgatc ctcagacttt actcacatgc 240
148       tgcctcgtct ctaaacagtg gaataaggtg ataagtgcct gtacagaggt gtggcagact 300
149       gcatgtaaaa atttgggctg gcagatagat gattctgttc aggacgcttt gcactggaag 360
150       aaggtttatt tgaaggctat tttgagaatg aagcaactgg aggaccatga agcctttgaa 420
151       acctcgtcat taattggaca cagtgccaga gtgtatgcac tttactacaa agatggactt 480
152       ctctgtacag ggtcagatga cttgtctgca aagctgtggg atgtgagcac agggcagtgc 540
153       gtttatggca tccagaccca cacttgtgca gcggtgaagt ttgatgaaca gaagcttgtg 600
154       acaggctcct ttgacaacac tgtggcttgc tgggaatgga gttccggagc caggacccag 660
155       cactttcggg ggcacacggg ggcggtattt agcgtggact acaatgatga actggatatc 720
156       ttggtgagcg gctctgcaga cttcactgtg aaagtatggg ctttatctgc tgggacatgc 780
157       ctgaacacac tcaccgggca cacggaatgg gtcaccaagg tagttttgca gaagtgcaaa 840
158       gtcaagtctc tcttgcacag tcctggagac tacatcctct taagtgcaga caaatatgag 900
159       attaagattt ggccaattgg gagagaaatc aactgtaagt gcttaaagac attgtctgtc 960
160       tctgaggata gaagtatctg cctgcagcca agacttcatt ttgatggcaa atacattgtc 1020
161       tgtagttcag cacttggtct ctaccagtgg gactttgcca gttatgatat tctcagggtc 1080
162       atcaagactc ctgagatagc aaacttggcc ttgcttggct ttggagatat ctttgccctg 1140
163       ctgtttgaca accgctacct gtacatcatg gacttgcgga cagagagcct gattagtcgc 1200
164       tggcctctgc cagagtacag ggaatcaaag agaggctcaa gcttcctggc aggcgaacat 1260
165       cctggctgaa tggactggat gggcacaatg acacgggctt ggtctttgcc accagcatgc 1320
166       ctgaccacag tattcacctg gtgttgtgga aggagcacgg ctgacaccat gagccaccac 1380
167       cgctgactga ctttgggtgc cggggctgcg ggttttgggt gcacctctgc ggcacgcgac 1440
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171 <211> LENGTH: 422
172 <212> TYPE: PRT
173 <213> ORGANISM: Homo sapiens
174 <400> SEQUENCE: 4
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176         1               5                  10                  15
177       Phe Leu Ser Leu Thr Asp Leu Gln Lys Asn Glu Thr Leu Asp His Leu
178                    20                  25                  30
179       Ile Ser Leu Ser Gly Ala Val Gln Leu Arg His Leu Ser Asn Asn Leu
180                35                  40                  45
181       Glu Thr Leu Leu Lys Arg Asp Phe Leu Lys Leu Leu Pro Leu Glu Leu
182            50                  55                  60
183       Ser Phe Tyr Leu Leu Lys Trp Leu Asp Pro Gln Thr Leu Leu Thr Cys
184        65                  70                  75                  80
185       Cys Leu Val Ser Lys Gln Trp Asn Lys Val Ile Ser Ala Cys Thr Glu
186                        85                  90                  95
187       Val Trp Gln Thr Ala Cys Lys Asn Leu Gly Trp Gln Ile Asp Asp Ser
188                   100                 105                 110
189       Val Gln Asp Ala Leu His Trp Lys Lys Val Tyr Leu Lys Ala Ile Leu
190               115                 120                 125
191       Arg Met Lys Gln Leu Glu Asp His Glu Ala Phe Glu Thr Ser Ser Leu
192           130                 135                 140
193       Ile Gly His Ser Ala Arg Val Tyr Ala Leu Tyr Tyr Lys Asp Gly Leu
194       145                 150                 155                 160
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195       Leu Cys Thr Gly Ser Asp Asp Leu Ser Ala Lys Leu Trp Asp Val Ser
196                       165                 170                 175
197       Thr Gly Gln Cys Val Tyr Gly Ile Gln Thr His Thr Cys Ala Ala Val
198                   180                 185                 190
199       Lys Phe Asp Glu Gln Lys Leu Val Thr Gly Ser Phe Asp Asn Thr Val
200               195                 200                 205
201       Ala Cys Trp Glu Trp Ser Ser Gly Ala Arg Thr Gln His Phe Arg Gly
202           210                 215                 220
203       His Thr Gly Ala Val Phe Ser Val Asp Tyr Asn Asp Glu Leu Asp Ile
204       225                 230                 235                 240
205       Leu Val Ser Gly Ser Ala Asp Phe Thr Val Lys Val Trp Ala Leu Ser
206                       245                 250                 255
207       Ala Gly Thr Cys Leu Asn Thr Leu Thr Gly His Thr Glu Trp Val Thr
208                   260                 265                 270
209       Lys Val Val Leu Gln Lys Cys Lys Val Lys Ser Leu Leu His Ser Pro
210               275                 280                 285
211       Gly Asp Tyr Ile Leu Leu Ser Ala Asp Lys Tyr Glu Ile Lys Ile Trp
212           290                 295                 300
213       Pro Ile Gly Arg Glu Ile Asn Cys Lys Cys Leu Lys Thr Leu Ser Val
214       305                 310                 315                 320
215       Ser Glu Asp Arg Ser Ile Cys Leu Gln Pro Arg Leu His Phe Asp Gly
216                       325                 330                 335
217       Lys Tyr Ile Val Cys Ser Ser Ala Leu Gly Leu Tyr Gln Trp Asp Phe
218                   340                 345                 350
219       Ala Ser Tyr Asp Ile Leu Arg Val Ile Lys Thr Pro Glu Ile Ala Asn
220               355                 360                 365
221       Leu Ala Leu Leu Gly Phe Gly Asp Ile Phe Ala Leu Leu Phe Asp Asn
222           370                 375                 380
223       Arg Tyr Leu Tyr Ile Met Asp Leu Arg Thr Glu Ser Leu Ile Ser Arg
224       385                 390                 395                 400
225       Trp Pro Leu Pro Glu Tyr Arg Glu Ser Lys Arg Gly Ser Ser Phe Leu
226                       405                 410                 415
227       Ala Gly Glu His Pro Gly
228                   420
230 <210> SEQ ID NO: 5
231 <211> LENGTH: 1407
232 <212> TYPE: DNA
233 <213> ORGANISM: Homo sapiens
234 <400> SEQUENCE: 5
235       cggggtggtg tgtggggaa gccgcccccg gcagcaggat gaaacgagga ggaagagata 60
236       gtgaccgtaa ttcatcagaa gaaggaactg cagagaaatc caagaaactg aggactacaa 120
237       atgagcattc tcagacttgt gattggggta atctccttca ggacattatt ctccaagtat 180
238       ttaaatattt gcctcttctt gaccgggctc atgcttcaca agtttgccgc aactggaacc 240
239       aggtatttca catgcctgac ttgtggagat gttttgaatt tgaactgaat cagccagcta 300
240       catcttattt gaaagctacc catccagagc tgatcaaaca gattattaaa agacattcaa 360
241       accatctaca atatgtcagc ttcaaggtgg acagcagcaa ggaatcagct gaagcagctt 420
242       gtgatatact atcgcaactt gtgaattgct ctttaaaaac acttggactt atttcaactg 480
243       ctcgaccaag ctttatggat ttaccaaagt ctcactttat ctctgcactg acagttgtgt 540
244       tcgtaaactc caaatccctg tcttcgctta agatagatga tactccagta gatgatccat 600
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Output Set: N:\CRF4\02202004\J632150.raw

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:26; Xaa Pos. 218,556,630
Seq#:29; N Pos. 13,47,68,88,270
Seq#:30; Xaa Pos. 15,22,28,89
Seq#:37; N Pos. 45,329,332
Seq#:38; Xaa Pos. 110,111
Seq#:51; N Pos. 1733
Seq#:52; Xaa Pos. 576,586
Seq#:53; N Pos. 348
Seq#:54; Xaa Pos. 150,309,340,374
Seq#:59; N Pos. 471

VERIFICATION SUMMARY DATE: 02/20/2004
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L:964 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26 after pos.:208
M:341 Repeated in SeqNo=26
L:1188 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29 after pos.:0
M:341 Repeated in SeqNo=29
L:1203 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30 after pos.:0
M:341 Repeated in SeqNo=30
L:1374 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37 after pos.:0
M:341 Repeated in SeqNo=37
L:1403 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:38 after pos.:96
L:1948 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51 after pos.:1680
L:2030 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:52 after pos.:560
M:341 Repeated in SeqNo=52
L:2049 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:53 after pos.:300
L:2101 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:54 after pos.:144
M:341 Repeated in SeqNo=54
L:2349 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:59 after pos.:420